

**Before the Federal Communications Commission**

**Washington D.C. 20554**

In the matter of	)	
	)	
Amendment of Parts 13 and 80 of the	)	WT Docket Nos. 00-48 and 02-102
Commission's Rules Concerning	)	
Maritime Communications	)	

**Comments of**

**Kurt Anderson**

**GMDSS Instructor**

Submitted 7 September, 2003

I actively sailed as a Radio Officer in the U.S. Merchant Marine from 1979-1998; from 1997-1998 serving on an A3 equipped GMDSS vessel whose itinerary covered the Pacific Ocean, the Caribbean Sea and the East Coast of the U.S. I have held a FCC Second Class Radio Telegraph License continuously for 24 years. I also hold a FCC GMDSS Radio Operators/Maintainers License. I have been engaged as a GMDSS Instructor from 1998-2003 and have contributed to the creation of GMDSS STCW curriculum and the STCW GMDSS test pool, which now also comprises FCC Element 7.

**General comments:**

Without going into the detail of my comments of 8/14/02, CFR governing GMDSS ships should be readily found in Subpart W and not intermixed with other portions of Part 80. If for some reason this cannot be done, those portions of (for example) 80.409 that pertain to only GMDSS ships or only non-GMDSS ships should be clearly delineated.

Regulations which are clear, comprehensive and explicit are desperately required and would be greatly welcomed by the industry. This may be the last opportunity for some time to clear up some longstanding deficiencies in Par 80. I strongly urge an effort to further improve GMDSS regulations pertaining to logkeeping, Pre-departure & Daily tests, S.C.E. tests, battery tests & maintenance

In the Regulatory section of the proposed final rule the commission states: "We anticipate that these rule changes will not impose any new burdens on small entities, but in fact will reduce regulatory and procedural burdens on small entities." As regards the proposed 80.409 (e) changes this is not true.

The proposed CFR 80.409 (e1) reads:

(1) A summary of all distress communications heard, and urgency communications affecting the station's own ship.

Under the past interpretations of this regulation this would continue to require GMDSS vessels to log Distress priority DSC acknowledgements & DSC relays from coast stations and other vessels.

Although there is anecdotal evidence that the level of DSC alerts is reduced – it is still a major problem in many area of the world. Not only is this regulation burdensome it is pointless. No one, from the company to the regulatory authorities are examining and reading these archived logs. Any competent inspection can find a record of calls in the DSC unit call data directory/electronic memory. The phrase “communications affecting the station’s own ship is vague and open to widely different interpretations.”

409 (e) should read:

- (1) A summary of all Distress Priority Voice or Sitor/NBDP communications heard or transmitted. ALL vessels shall log Distress priority communications from RCC/SAR entities. GMDSS equipped vessels are **not** required to log Distress Priority DSC Acknowledgements or Relays from other vessels or from coast stations. GMDSS equipped vessels **are** required to log Distress Priority DSC Alerts received directly from other vessels – these are either genuine Distress alerts or false alerts.

The proposed CFR 80.409 (e) (2) reads:

- (2) A summary of safety communications on other than VHF channels affecting the station’s own ship.

If the intent of this section is to require the logging of all Inmarsat MSI/EGC and perhaps even Navtex Safety & Urgent MSI broadcasts this section should either make that clear or state that such action on GMDSS ships is not required. The conscientious officers on any vessel monitor the Urgent and Safety radio products available to them and an additional log-keeping burden & requirement is not going to convince a carelessly run vessel to seek out these resources. Any competent inspection can find a record of MSI calls in the Inmarsat terminals and the Navtex receiver.

409 (e) should read:

- (2) A summary of Urgent and Safety transmissions by the vessel shall be logged. GMDSS vessels are not required to log Inmarsat-C EGC/MSI messages or Navtex MSI messages received.

The proposed CFR 80.409 (e) (3) reads:

- (3) An entry that pre-departure equipment checks were satisfactory and that required publications are on hand. Daily entries of satisfactory tests to ensure the continued proper functioning of GMDSS equipment shall be made.

This section is insufficient guidance for a GMDSS equipped vessel. At a minimum the Pre-departure test should be differentiated from the daily test and should read:

409 (e) should read:

On GMDSS vessels, all GMDSS equipment (except for S.C.E.) shall be tested prior to sailing by on-air communications or self-test routines if on-air tests are unavailable. This Pre-Departure test shall suffice for the remainder of the calendar day. Every day thereafter at sea, all GMDSS equipment shall be proven satisfactory either by daily use of the equipment or another test identical to the Pre-departure test. Proper Battery (or R.S.E) operation shall be demonstrated by an actual test. All GMDSS publications and documents in 80.401 are aboard.

(If the one-hour prior to sailing requirement is to be waived for smaller GMDSS vessels this should be made explicit ). I think that the ability of the console to operate off of battery power should be checked prior to sailing and daily thereafter rather than the proposed monthly interval of 80.1099.

An example of the USCG STCW training checklist we've developed concerning a GMDSS gear test follows.

<input type="checkbox"/>	<b>TESTING:</b> The basic principle is that all required equipment (except for Survival Craft Equipment) must be used or tested once daily per 47 CFR 80.409 (e) to ensure full operating capability.
<input type="checkbox"/>	A pre-departure test is usually performed one hour prior to sailing. This test should consist of on-air operational tests or equipment self-test routines to prove satisfactory operation.
<input type="checkbox"/>	A pre-departure test will suffice for the remainder of the calendar day.
<input type="checkbox"/>	On the next calendar day a daily test should be performed. This test is identical to the pre-departure test.
<input type="checkbox"/>	If any individual equipment was used during the day for ship's business its proper operation has been demonstrated and an additional test does not have to be performed.

The proposed CFR 80.409 (e) (5) reads:

- (5) A weekly entry that: (i) The proper functioning of digital selective calling (DSC) equipment has been verified by actual communications or a test call;
- (ii) The batteries or other reserve power sources are functioning properly;
- (iii) The portable survival craft radio gear and radar transponders have been tested; and
- (iv) The EPIRBs have been inspected.

This section frankly makes little sense to me. Where does the weekly interval come from? The revised 80.1099 for GMDSS is closer to the mark and appears to conflict with the revised 80.409 (e) (5) weekly requirement.

Certification that the batteries or other reserve power sources are functioning properly should be part of the Pre-departure and then the daily test entries for GMDSS equipped ships. Daily attention by the watch officer to the requirement for a daily log entry is an excellent way to call attention to the condition of the batteries. The charging voltage and current values are a very good indication of both the condition of the batteries and that the charging circuits have not become defective. The automatic charging circuits have been known to fail – damaging or destroying the batteries and rendering them useless in a Distress situation.

Log entries regarding GMDSS batteries should read:

The times when storage batteries provided as a part of the required GMDSS installation are placed on full or trickle or automatic charge and taken off full or trickle or automatic charge; Daily battery charger Voltage and Current readings shall be entered in the log.

GMDSS batteries shall be further checked on at least a monthly basis per 80.1099. These test results including specific gravity of lead-acid storage batteries and voltage reading of other types of batteries provided as a part of the compulsory installation; shall be entered in the log.

Concerning the phrase “A weekly entry that: (i) The proper functioning of digital selective calling (DSC) equipment has been verified by actual communications or a test call;” what is the purpose of this?

The DSC equipment should be checked on the Pre-departure test and daily thereafter, an additional weekly test is either superfluous or not often enough. While there are GMDSS shore stations in Europe that have an automated test call feature I am unaware of such facilities in U.S. waters and most current ship units don't even have the feature. Watch officers at the USCG COMMSTAs surely do not want to be deluged with a torrent of Routine DSC test calls that might result from a misinterpretation of this section. While recognizing the CFR would not go into this much detail, again -  
- An example of the USCG STCW training checklist we've developed concerning a GMDSS gear test follows.

<input type="checkbox"/>	<b><u>MF-HF Transceiver - Radiotelephone.</u></b> Perform any self-test routines available. Make a live test by selecting an appropriate Routine J3E voice frequency (e.g. 4146.0, 8297.0 KHz etc.) and speaking into the mike. Normal operation should be indicated by a satisfactory output fluctuation – the S-meter indication. (This will vary with equipment manufacturer. The best method is to install an inline wattmeter in the transmission line to the antenna tuner.) Note -- if another HF SSB radio is available, your voice could be heard on the frequency employed for testing – <b>USE LOWEST POSSIBLE POWER.</b>
<input type="checkbox"/>	<b><u>MF-HF Transceiver -NBDP modem/controller.</u></b> Perform any self-test routines available. For SITOR/NBDP initiate a call to any suitable HF station, observe the exchange of Automatic Answer Backs (AAB) then the GA+ and then break off the connection.
<input type="checkbox"/>	<b><u>MF-HF DSC Controller and MF-HF DSC Watch Receiver:</u></b> Perform any self-test routines available.
<input type="checkbox"/>	<b><u>MF-HF Transceiver &amp; MF-HF DSC Controller:</u></b> Taken together, the above three tests are as complete as feasible given current shore station availability and facilities and should satisfy all but the most particular inspector. DSC operations were proven by the internal self-test, voice operations and mic condition by observing modulation on the S-meter and Amplifier, Antenna Tuner and Antenna condition proven good by the Automated Sitor Exchange. The exchange was not chargeable to the vessel and the break after the GA+ was just perceived by the shore station computer as a disconnect. The USCG does NOT do test calls!

The EPIRB, SART and SCT are currently on a monthly, annual & annual inspection interval respectively. They ought to be placed on a monthly basis for all three. Testing the S.C.E. equipment on a weekly basis is both unnecessary and if one does the AMP-hour calculations, will exhaust the batteries in well under the 5 year period mandated. (Many ships did exactly that in the 1990's believing these devices should be tested weekly). Conversely a year is too long an interval.

The CFR dealing with S.C.E. in either 80.409 or 80.1099 section should read something to the effect:

GMDSS SURVIVAL CRAFT EQUIPMENT: The EPIRB, SART and SCT all have a 5-year replacement battery cycle interval with NO grace period. The EPIRB ARM/Hydrostatic relief is on a 2-year replacement interval period with NO grace period.

Check and Record the battery expiration dates for all three devices. Check and record the ARM/Hydrostatic relief expiration date for the EPIRB.

Check for current NOAA registration label. Unregistered EPIRBS are not permitted. Once the vessel's EPIRB has been registered with NOAA they will return a label, which must be affixed, to the EPIRB. Ensure the NOAA registration label has the same HEX ID number as the EPIRB and that the correct number is listed in the radio log and maintenance records. See 80.1061 (e)(f)

As noted above there should be a Pre-departure and perhaps even a Daily certification in the log that the S.C.E. devices are present on the vessel with no evidence of physical damage or theft etc.

The proposed CFR 80.409 (e) (7) reads:

(7) At the beginning of each watch, the Officer of the Navigational Watch, or GMDSS Operator on watch, if one is provided, shall ensure that the navigation receiver is functioning properly ....

The historical phrase was "at least every four hours" -- is the proposed phrase meant to account for 6-hour watches? If not "each watch" might well be made precise by the addition of the phrase does was "at least every four hours

The proposed CFR 80.409 (e) (8) reads:

(8) A GMDSS radio log entry shall be made whenever GMDSS equipment is exchanged or replaced (ensuring that ship MMSI identifiers are properly updated in the replacement equipment), when major repairs to GMDSS equipment are accomplished, and when annual GMDSS inspections are conducted.

\* \* \* \*

I suggest the sentence be added: "The GMDSS Maintainer's license number of the person performing repairs, exchanges or repairs of GMDSS equipment shall be entered in the log."

The following questions in 80.409 still need to be resolved:

- 1) Are Routine Inmarsat transmissions (other than the daily and Pre-departure tests) required to be logged by all compulsory GMDSS vessels? Yes or no?
- 2) Are Routine priority MF/HF Voice or NBDP/Sitor transmissions (other than the daily and Pre-departure tests) required to be logged by all compulsory GMDSS vessels? Yes or no?
- 3) Is electronic log-keeping allowed?
- 4) Is log-keeping on a monthly or quarterly basis allowed?

In 80.159 the phrase "if the passenger ship operates exclusively within 20 nautical miles of shore" (and this or similar phraseology appears in a number of other places e.g. 80.1073 (a)(2). The Radio regulations should not depend on physical location of the vessel. This may lead to unneeded confusion. The meaning of the A1-A4 GMDSS sea areas are commonly understood in the industry and well defined by ITU/IMO definitions

Any Part 80 regulations referring to the ROC license or A1 watch status should clearly reference the A1 GMDSS Sea Area as the governing factor. Vessels & organizations applying for A1 status & licensing would clearly understand their status as the A1 area are implemented in the U.S.

The proposed 80.1117 reads:

(a) Normally, distress calls received using digital selective calling are only acknowledged using a DSC acknowledgement by a coast station. Ships should delay any acknowledgement in order to give sufficient time for a coast station to acknowledge the call. In cases where no acknowledgement has been heard and no distress traffic has been heard, the ship should transmit a distress alert relay to the coast station.

This phrasing could lead a vessel to think a DSC Relay should be used. This will not contribute to reducing the level of Alerts, Relays & Acknowledgements).

The sentence should be revised to read:

In cases where no acknowledgement has been heard and no distress traffic has been heard, the ship should transmit a distress alert relay (**using VHF/HF voice, MF/HF Sitor/NBDP, Inmarsat Voice/telex or any method other than DSC**) to the coast station.

The same issue is better dealt with in the revised 80.1121 which follows but I suggest the additions in bold:

Section 80.1121 is amended by revising paragraphs (b), (c), and (d) to read as follows: §  
**80.1121 Receipt and acknowledgement**

**of distress alerts by ship stations and ship earth stations.**

\* \* \* \* \*

(b) For VHF and MF, ships in receipt of a distress alert shall not transmit a **DSC** distress alert relay, but should listen on the distress traffic channel for 5 minutes and, if appropriate, acknowledge the alert by radiotelephony/**NBDP** to the ship in distress and inform the coast station and/or Rescue Coordination Center.

Distress alert relays **via radiotelephony/NBDP** to "all ships" on these bands may only be sent by a ship who has knowledge that another ship in distress is not itself able to transmit the distress alert, and the Master of the ship considers that further help is necessary.

(c) For HF, ships in receipt of a distress alert shall listen on the distress traffic channel for 5 minutes. If no distress communications are heard and if the call is not

acknowledged by a coast station, the ship shall transmit a distress relay on HF **via radiotelephony/NBDP** to the coast radiostation and inform the Rescue Coordination Center. Relays to ``all Ships`` on HF **via radiotelephony/NBDP** may only be sent by a ship who has knowledge that another ship in distress is not itself able to transmit the distress alert, and the Master of the ship considers that further help is necessary.

(d) In cases where distress alert continues to be received from the same source, the ship may, after consultation with the Rescue Coordination Center, transmit a DSC acknowledgment to terminate the call.

\* \* \* \* \*

The revised regulations still do not deal fully with the reality that due to propagation and relative positions of vessels and coast stations there are many instances in which a vessel gets a DSC Distress alert but does not know whether a coast station has acknowledged the original call. There are many instances where the call arrives mutilated or is from another ocean.

Most vessels do not now comply with the proposed requirements of 801121 (c) nor will most in the future. At a minimum, this section should make it absolutely clear that the requirements for relays shall not be done via DSC and are not required in the case of other vessel's DSC Distress Acknowledgments and Relays. I've noted NBDP in the MF section due to the potential distress on 2174.5 KHz.

Submitted by:

Kurt Anderson

1218 Lakeview Blvd. E.

Seattle, WA 98102

Phone: 206-325-1968

e-mail: [wxwl@juno.com](mailto:wxwl@juno.com)